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# *Solanum tepuiense*, a New Species of Section *Geminata* (Solanaceae) from the Venezuelan Guayana

Sandra Knapp

Department of Biological Sciences, Mississippi State, Box GY,  
and Institute for Botanical Exploration, Box EN,  
Mississippi State, Mississippi 39762, U.S.A.

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The sandstone plateaus of the Venezuelan Guayana are not areas of great *Solanum* species diversity as they are for so many other groups of flowering plants (Steyermark, 1979). Only three species of the large and diverse section *Geminata* (Knapp, 1986) occur in the region: *Solanum oppositifolium* Ruiz Lopez & Pavón (including *S. puberuloba* Steyermark.), *S. campaniforme* Roemer & Schultes, and the new species described here. These species are separated in the key below.

Members of section *Geminata* are generally small trees and shrubs, an unusual habit in *Solanum*, often growing in primary forest understory. The section is the largest group of nonspiny solanums and comprises some 125 species distributed throughout the Neotropics. Characters useful in recognizing the section are: (1) difoliate sympodial units with geminate leaves or unifoliate sympodial units; (2) leaf-opposed inflorescences; (3) small, white or greenish white flowers; and (4) hard, green fruits at maturity (see Knapp, 1986, for more detailed discussion of the characters of the section).

***Solanum tepuiense*** S. Knapp, sp. nov. TYPE: Venezuela. Bolívar: north-facing slope forest Sororopan, cumbre Sororopán-tepuí, 1,800 m, 15 Dec. 1952, Maguire & Wurdack 33940 (holotype, NY; isotype, F). Figure 1.

*Frutex*; *caules* valde alati; *sympodia* difoliata geminata; *folia* elliptica supra glabra nitida subtus pubescentia, trichomatibus uniseriatis pluricellularibus in axillis venarum ferentia; *inflorescentiae* foliis oppositae glabrae; *pedicelli* sub anthesi deflexi; *calycis* lobi late deltoidei, apice tumido; *corolla* alba; *bacca* globosa, in pedicello lignoso deflexo inserta; *semina* ferruginea complanata reniformia, margine incrassato; *testa* foveolata.

*Shrub*, 2.5 m tall. *Young stems* and leaves with a few yellowish papillae, otherwise glabrous, the branches stout, strongly winged from the decurrent leaf bases. *Bark* of older stems pale green, dull, the wings persisting. *Sympodia* difoliate, geminate. *Leaves* elliptic ("repandly rugose" fide Maguire & Wurdack), thick and coriaceous, somewhat falcate,

glabrous and shining adaxially, glabrous or with tufts of simple uniseriate trichomes 0.5–1 mm (5–15 small, beadlike cells) long at the junction of the primary veins and the midrib abaxially, the trichomes arising from the veins, not from the lamina; major leaves 8–14 cm long, 3–5 cm wide, with 7–10 pairs of primary veins, these impressed adaxially, prominent and yellowish abaxially, the apex acute to acuminate, the base acute to attenuate, strongly decurrent onto the stem; petioles winged from the leaf bases, 0.8–2.5 cm long; minor leaves not differing from the majors in shape, 3.5–8 cm long, 1.5–3 cm wide, the apex acute to acuminate, the base acute to attenuate; petioles winged, 0.4–1 cm long. *Inflorescences* opposite the leaves, simple, with a few yellowish papillae at the tips, otherwise glabrous and drying dark brown, 1–1.6 cm long, with 10–14 flowers, only one or two open at a time; *pedicel scars* evenly spaced 1–1.5 mm apart, beginning about 1/3 of the way from the base. *Buds* globose when young, later ellipsoidal, the corolla strongly exerted from the calyx tube just before anthesis. *Pedicels* deflexed at anthesis, glabrous, fleshy, apparently green, strongly tapered toward the base, 1.3–1.7 cm long, ca. 0.5 mm diam. at the base, ca. 2 mm diam. at the apex. *Calyx* tube conical, 1–1.5 mm long, the lobes broadly deltate with an acute apical projection, 0.5–1 mm long, the margins thin and transparent, a few golden papillae at the tips of the lobes. *Corolla* white, somewhat thick and fleshy, 1.5–2 cm diam., lobed nearly to the base, the lobes planar at anthesis (?), minutely papillose at the tips and margins of the lobes. *Stamens* with the anthers 4–5 mm long, 1.5–2 mm wide, poricidal at the tips, the pores ultimately lengthening to slits; free portion of the filaments ca. 0.5 mm long, the filament tube ca. 1 mm long, glabrous. *Ovary* glabrous. *Style* glabrous, 7–8 mm long, expanded apically. *Stigma* bilobed, minutely papillose. *Fruit* a globose berry, green (?) and hard at maturity, ca. 1.5 cm diam.; fruiting pedicels deflexed and woody, 2–2.5 cm long, ca. 1 mm diam. at the base, 2.5 mm diam. at the apex. *Seeds* reddish





Figure 1. *Solanum tepuiense*, habit (from Maguire & Wurdack 33940). Inset, abaxial leaf surface, scale bar = 1 mm.

brown, flattened reniform, 4–4.5 mm long, 2.5–3 mm wide, the margins incrassate and paler, the surfaces minutely pitted.

*Habitat and distribution.* *Solanum tepuiense* is known only from the type collection from the top of Sororopán-tepuí, a low-elevation sandstone table mountain near the Gran Sabana region (Fig. 2). The plant apparently grows in forest.

*Solanum tepuiense* is related to *S. nudum* Dunal, a widespread species of Central and northern South America (see Knapp, 1986). It differs from *S. nudum* in its larger flowers and strongly winged stems. The internodes in the type collection are very short and are perhaps a distinctive feature of *S. tepuiense*, but this may instead be related to habitat and thus not consistent. The trichomes of *S. tepuiense* are

quite different from those of *S. nudum* in being composed of many small cells. The cells appear beadlike and are generally square in shape (Fig. 1). The trichomes of *S. nudum* are composed of two or three elongate cells and are often branched.

*Solanum tepuiense* is not easily confused with any other *Solanum* occurring in the Guayana region. The following key will distinguish it from the other members of section *Geminata* in the Venezuelan Guayana.

- 1a. Leaves glabrous and drying golden abaxially; inflorescence axis covered with minute, golden, erect trichomes . . . . . *Solanum oppositifolium*
- 1b. Leaves with tufts of trichomes at the junctions of the primary veins and the midrib abaxially, if glabrous not drying golden; inflorescence axis glabrous.
  - 2a. Stems winged, the bark light green; leaves repandly rugose, somewhat fleshy, drying olive green; inflorescence axes 1–1.6 cm long, somewhat fleshy . . . *Solanum tepuiense*
  - 2b. Stems not winged, the bark dark reddish brown, peeling on older stems; leaves dark green and brittle in live plants, drying black; inflorescence axes 5–16 cm long, not fleshy . . . . . *Solanum campaniforme*

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Figure 2. Distribution of *Solanum tepuiense*.